FIG. 1

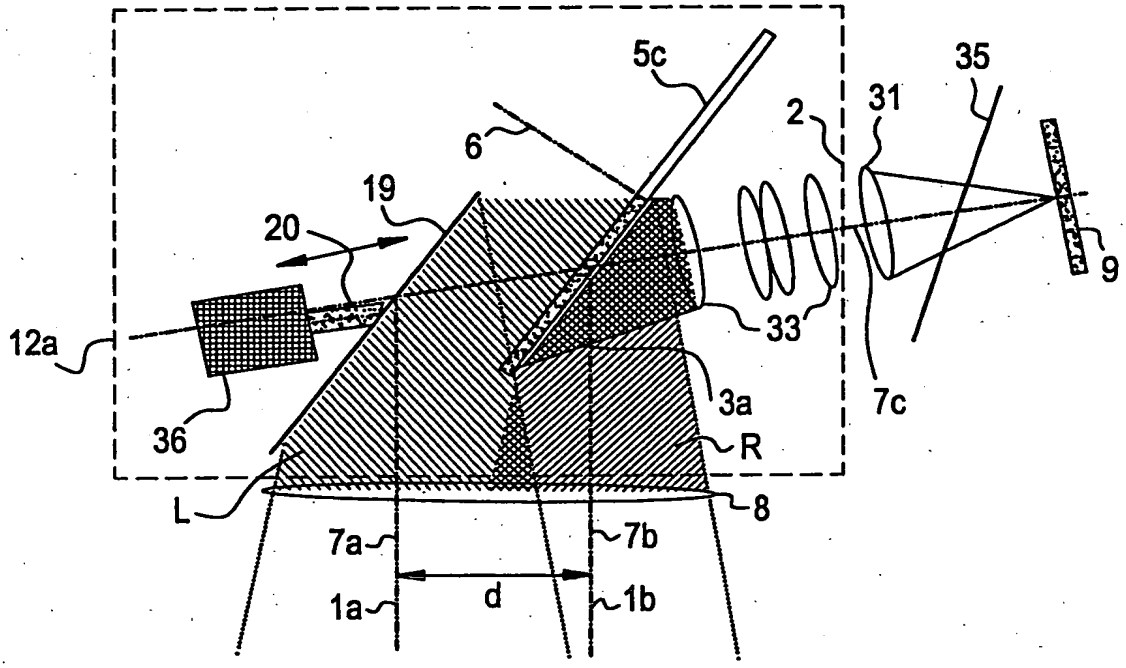
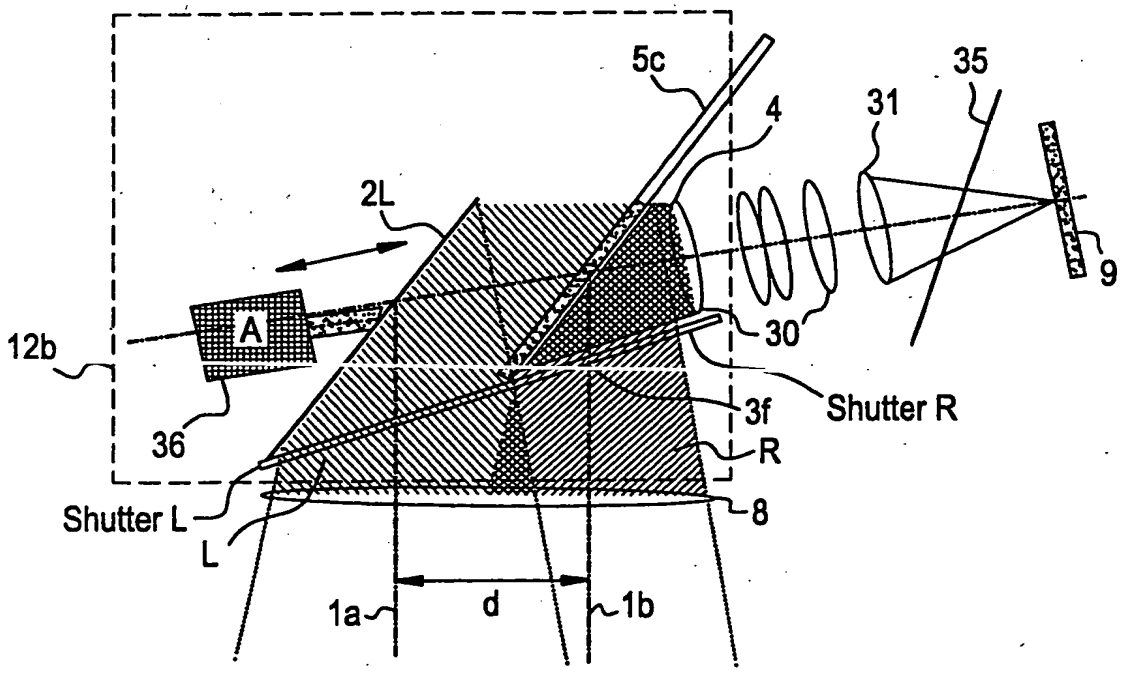

5c
35
31
2
6
19
20
9
12a
33
3a
7c
36
R
L
8
7a
7b
d
1a
1b

FIG. 2


5c
35
4
31
2L
9
A
12b
30
Shutter R
3f
36
R
Shutter L
8
L
d
1a
1b

Title: STEREOMICROSCOPE
Inventor(s): Roger SPINK et al.
016790/0444

FIG. 3

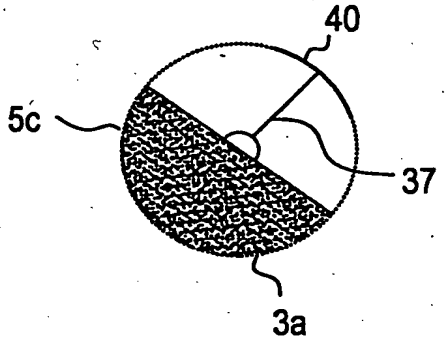


FIG. 4

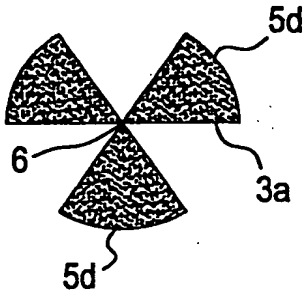


FIG. 5
Prior Art

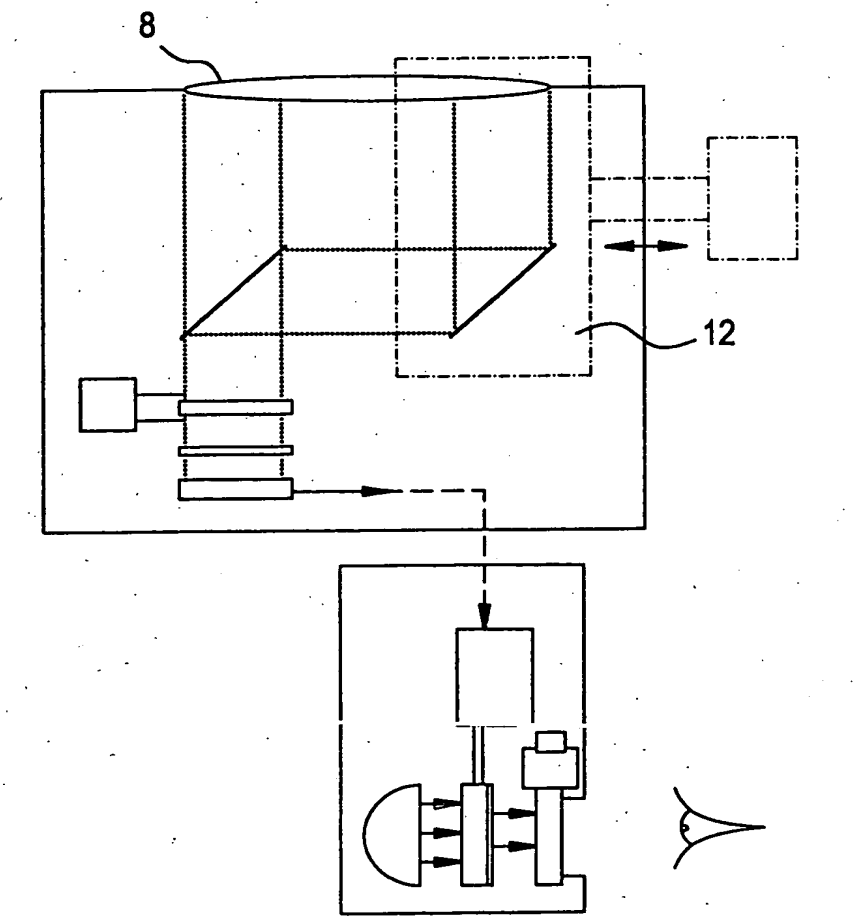


FIG. 6

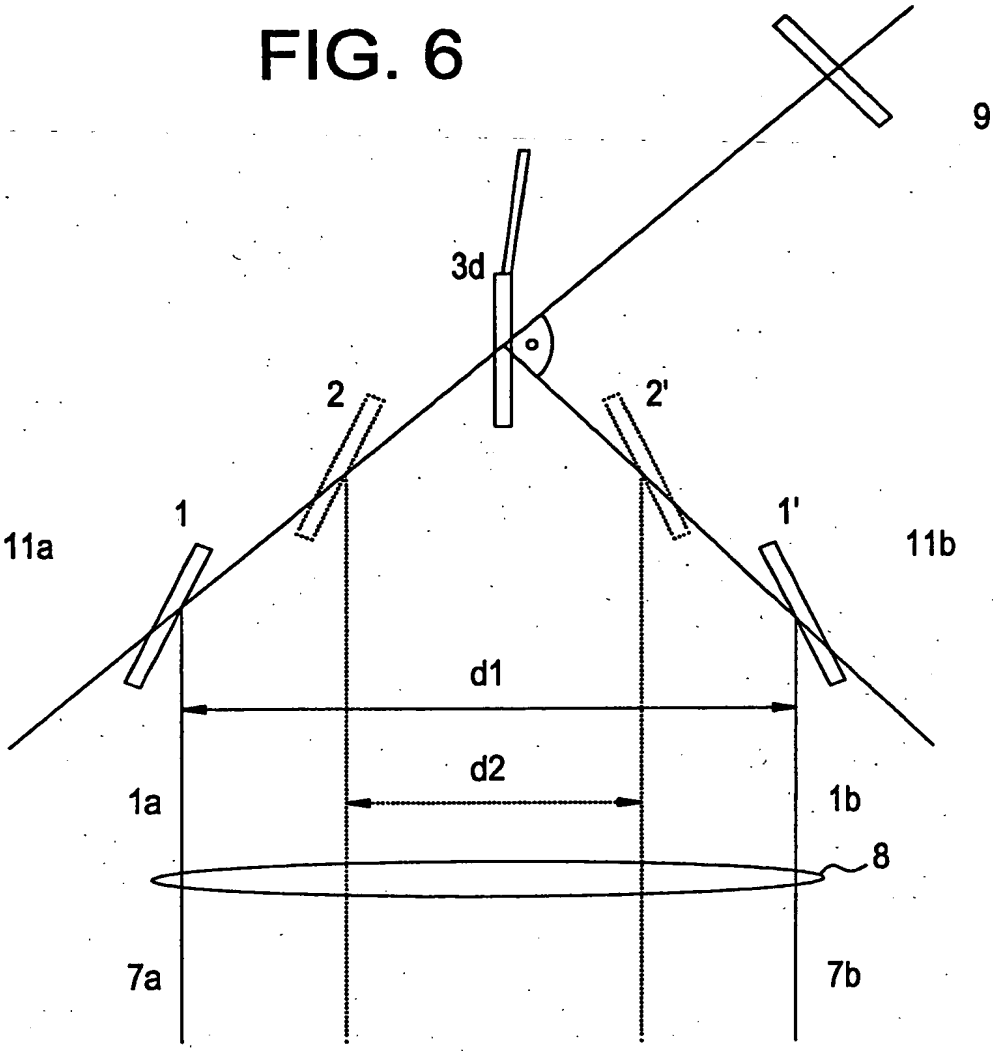


FIG. 7

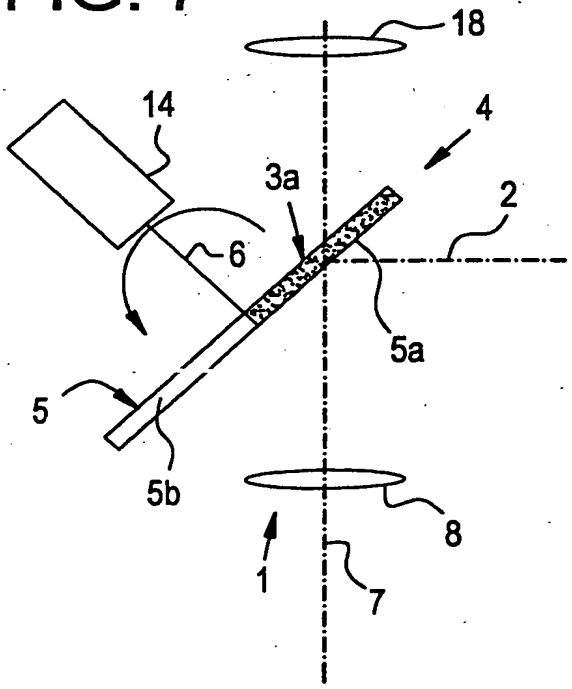


FIG. 8

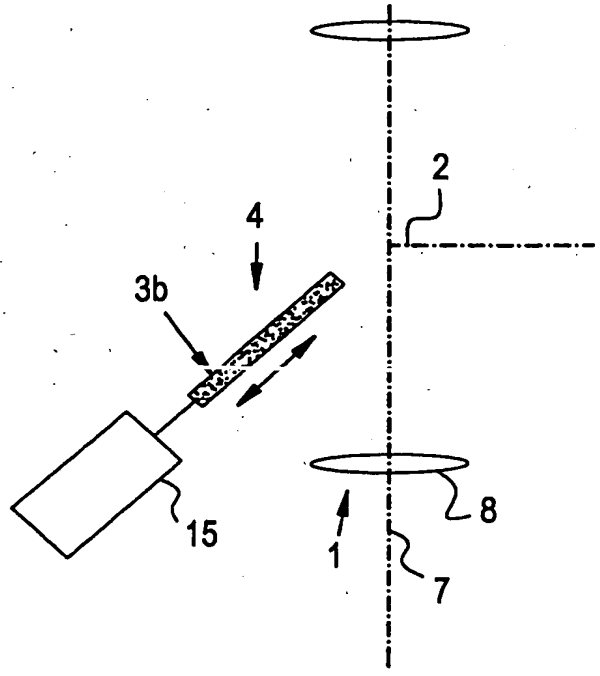


FIG. 9

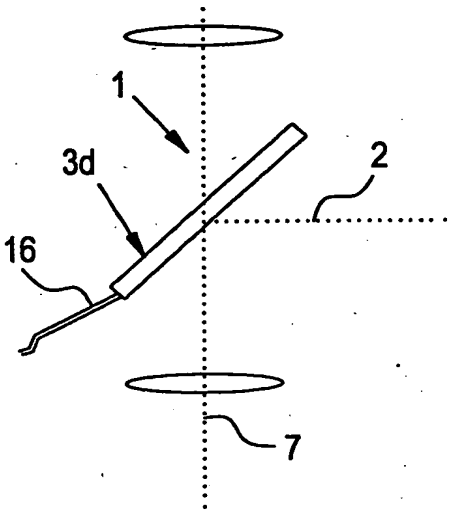


FIG. 10

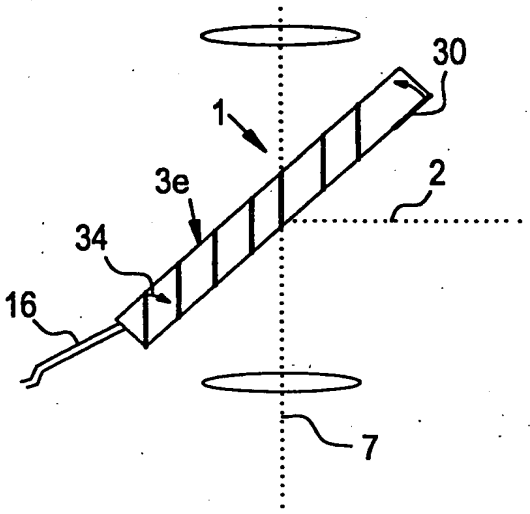


FIG. 11

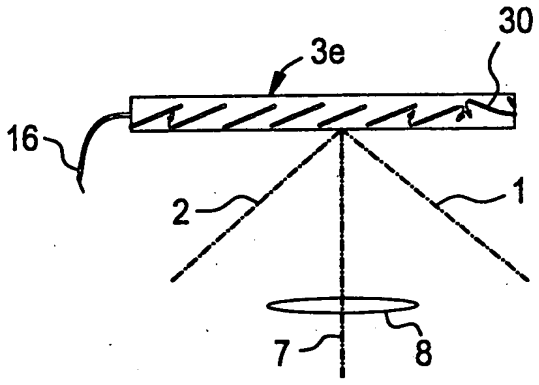


FIG. 12

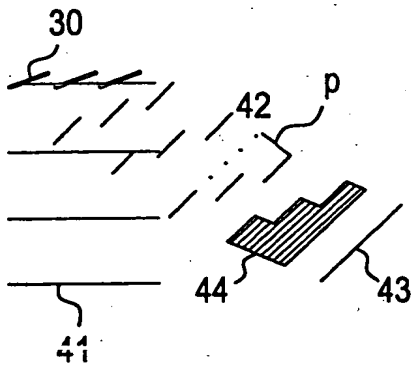


FIG. 13

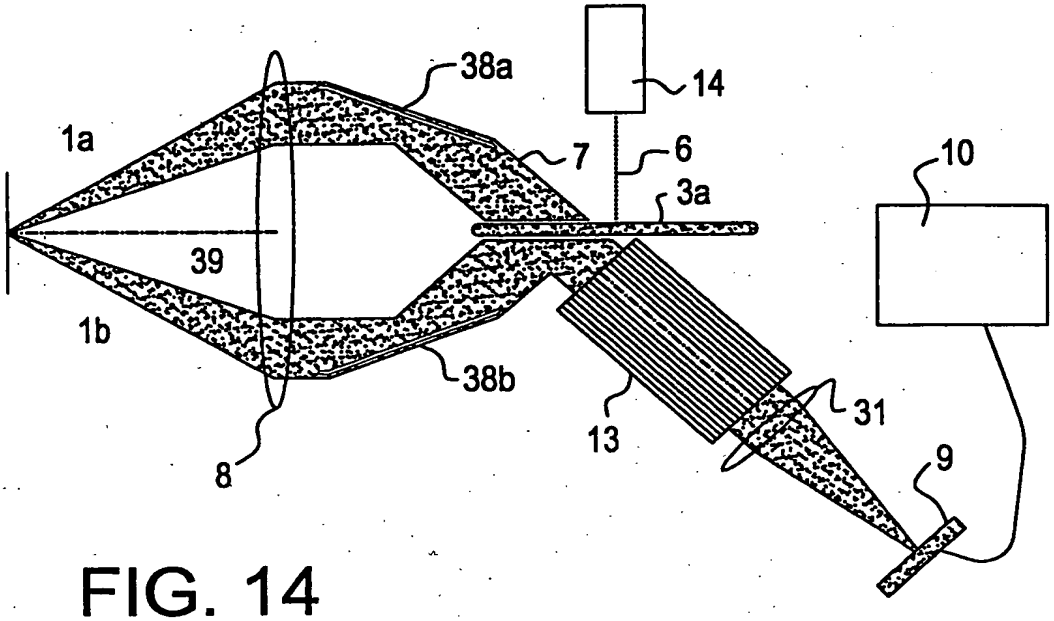


FIG. 14

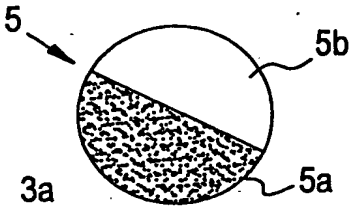


FIG. 15

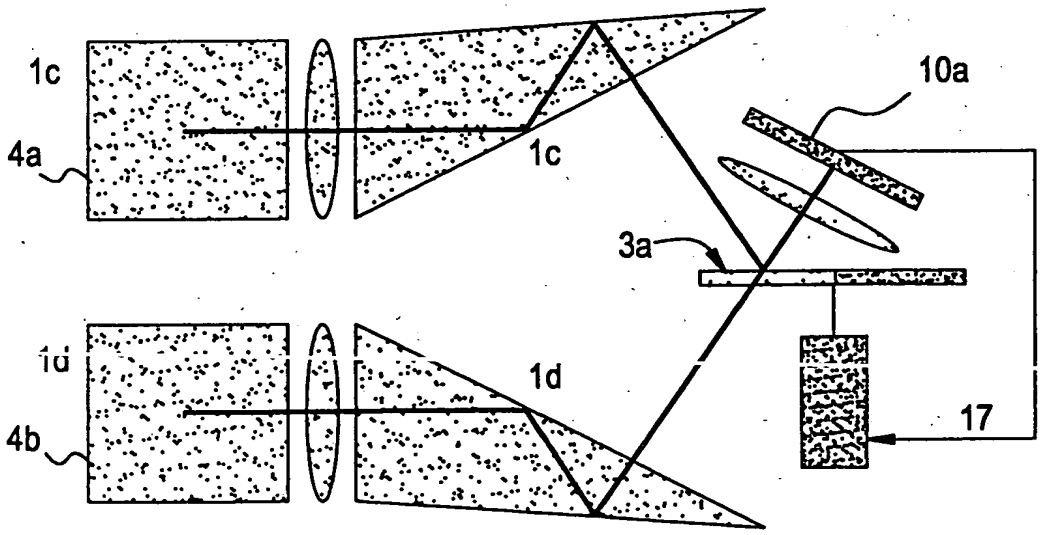


FIG. 16

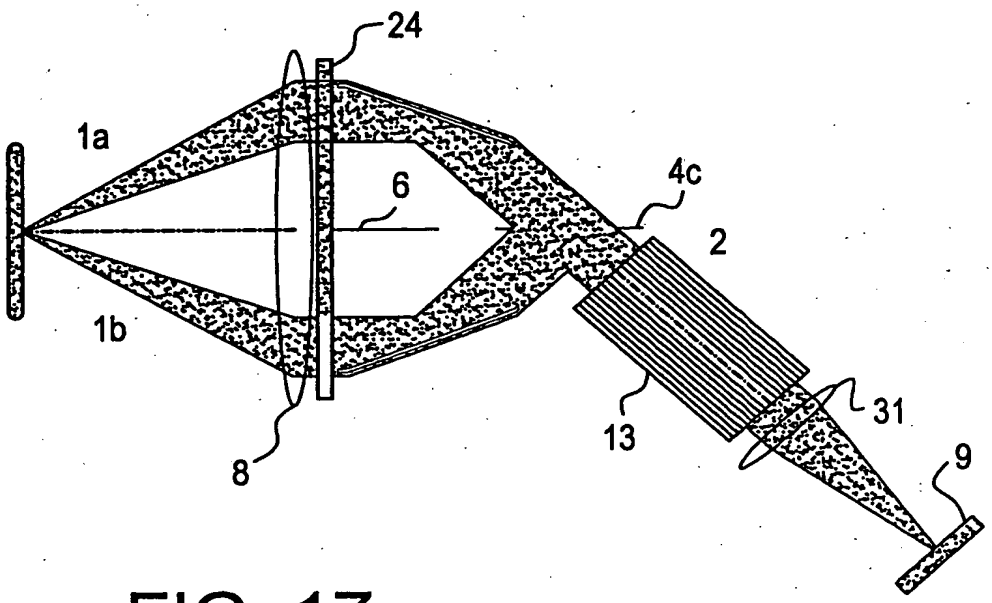


FIG. 17

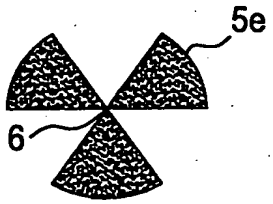


FIG. 18

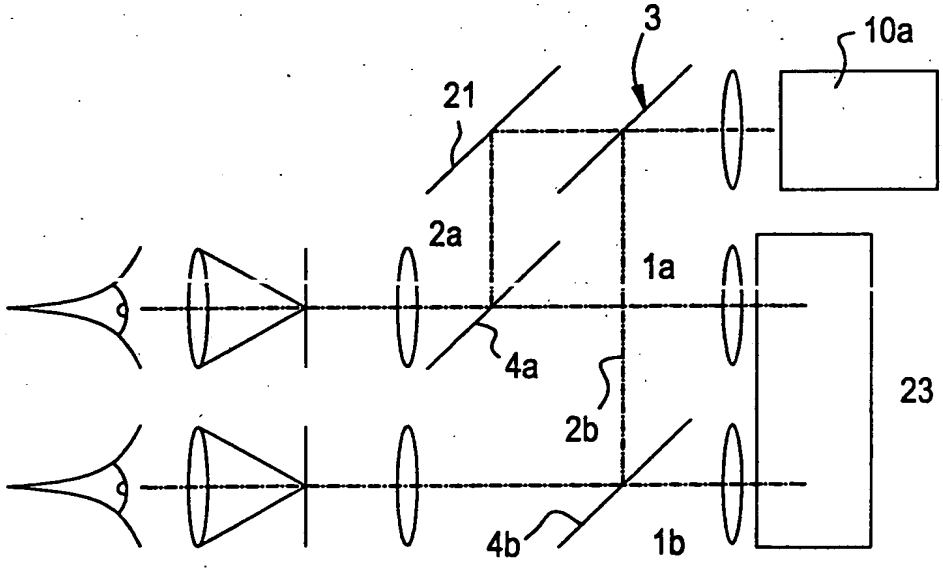


FIG. 19

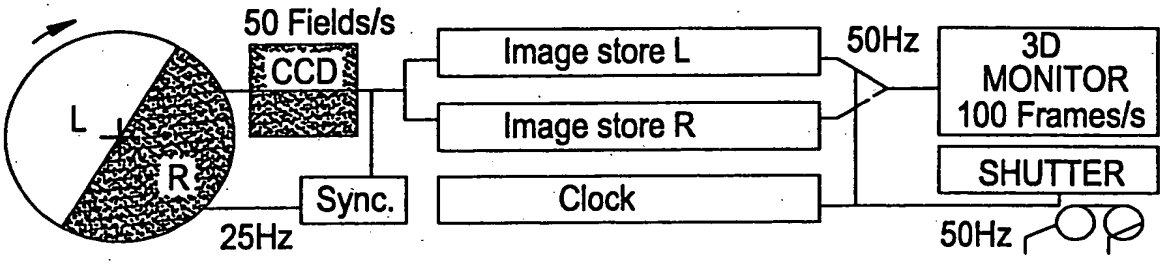

50 Fields/s
CCD
L
R
Sync.
25Hz
Image store L
Image store R
Clock
50Hz
3D
MONITOR
100 Frames/s
SHUTTER
50Hz

FIG. 20

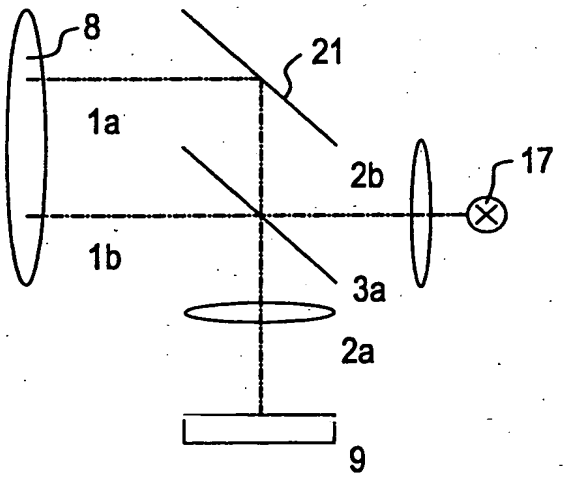

8
21
1a
2b
17
1b
3a
2a
9

FIG. 21

1) Arrangement having polarization for encoding the left and right beam paths:

Left	Right	
1.0	1.0	100% UNPOLARIZED OBJECT LIGHT
⊗	←	
0.5s · 0.84	0.5p · 0.84	POLARIZATION and effectiveness τ
0.42s	0.42p	linearly s- and p- polarized light
0.5	0.5	BEAM COMBINATION BY 50/50 SPLITTER
0.21s	0.21p	combined s- and p- beams
0.84 · 0.5	0.84 · 0.5	PERIODIC S- AND P- ANALYZER and time factor
0.09s	0.09p	Light on the detector (CCD)

2) Arrangement having reflection aperture diaphragms for the consecutive switching of the left and right beam path:

Left	Right	
1.0	1.0	100% OBJECT LIGHT
1.0 · 0.5	1.0 · 0.5	BEAM COMBINATION BY ROTATING MIRROR and time factor
0.5	0.5	Combined beam = Light on the detector (CCD)

3) Relation of 1) to 2):

Improvement:

0.5/ 0.09= 5.5

Note:

Serial sampling is used in both solutions.

FIG. 22

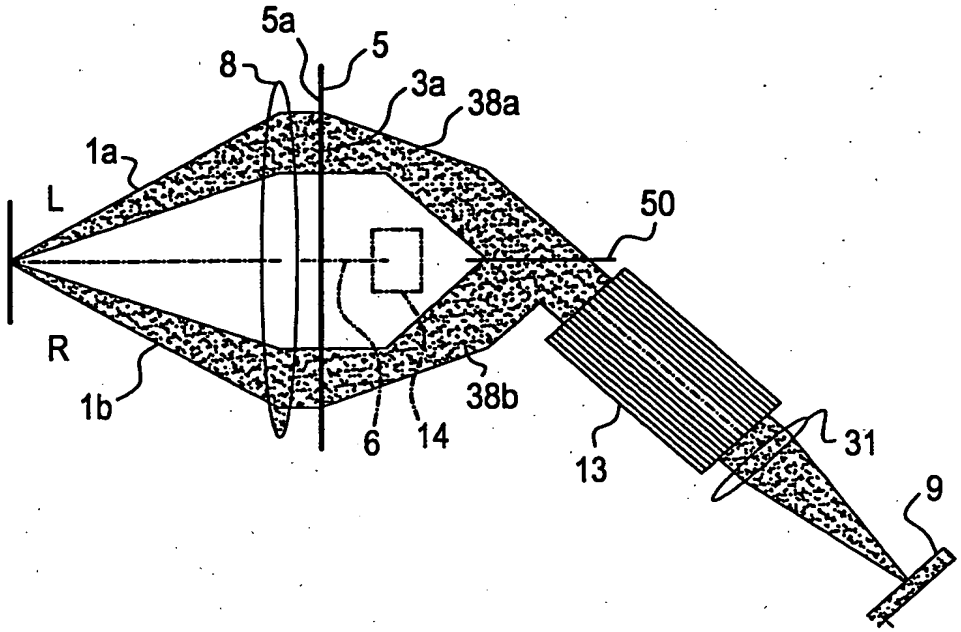

5a
5
8
3a
38a
1a
L
50
R
1b
38b
6
14
13
31
9

FIG. 23

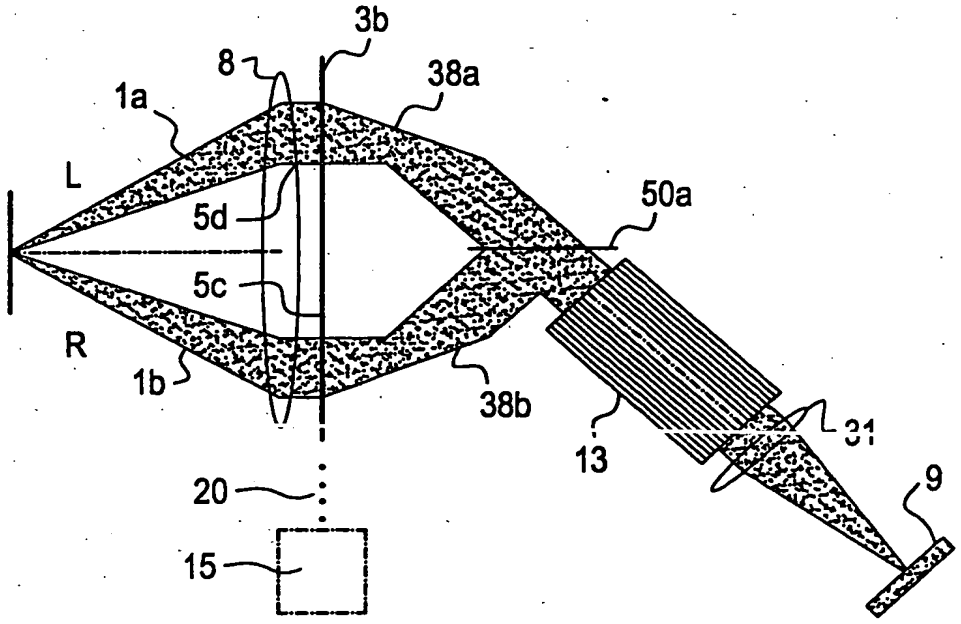

3b
8
38a
1a
L
50a
5d
5c
R
1b
38b
13
31
9
20
15

FIG. 24

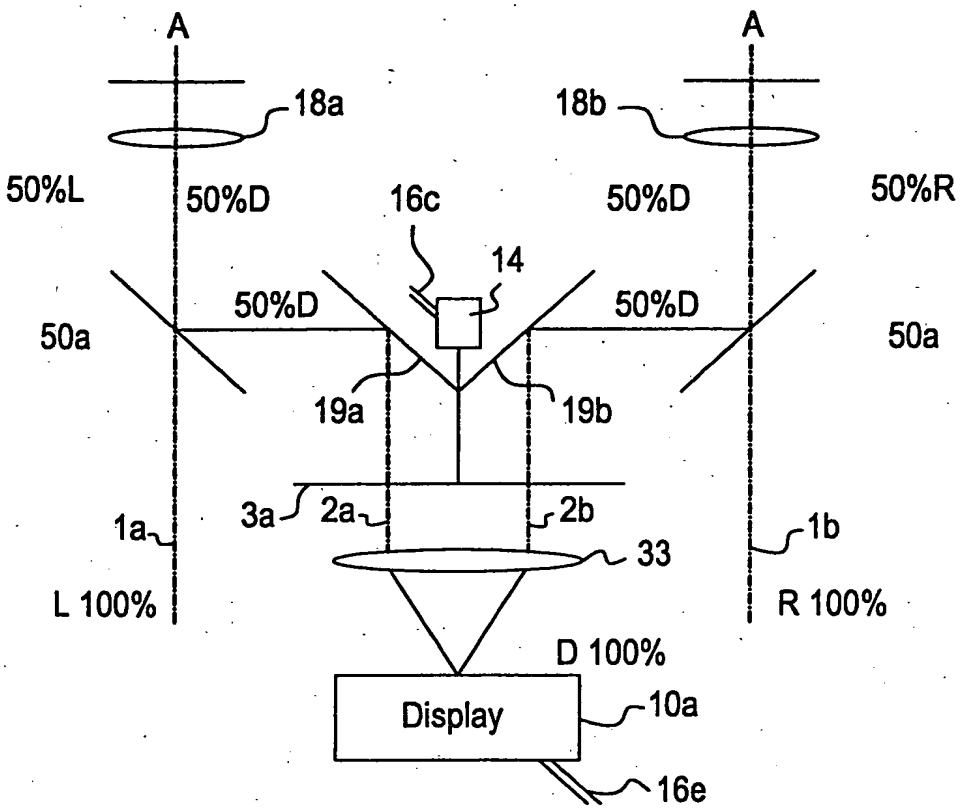

A
A
18a
18b
50%L
50%D
16c
50%D
50%R
14
50%D
50%D
50a
50a
19a
19b
3a
2a
2b
1a
1b
33
L 100%
R 100%
D 100%
Display
10a
16e

FIG. 25

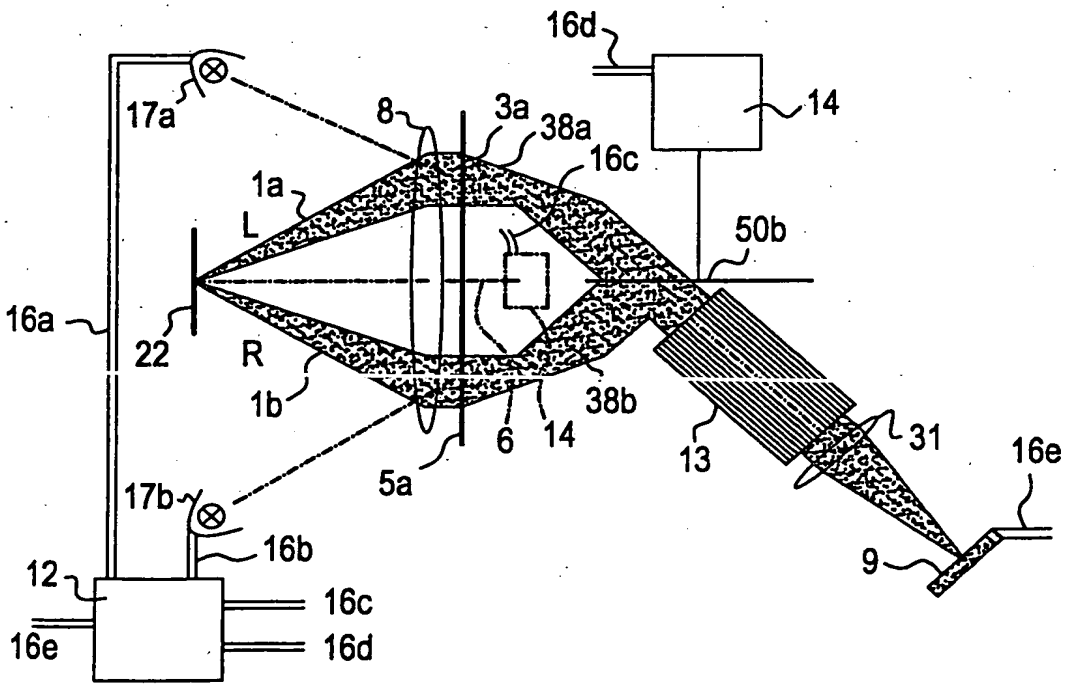

16d
14
17a
8
3a
38a
16c
1a
L
50b
16a
22
R
1b
38b
6
14
13
31
16e
5a
17b
16b
9
12
16c
16e
16d

FIG. 26

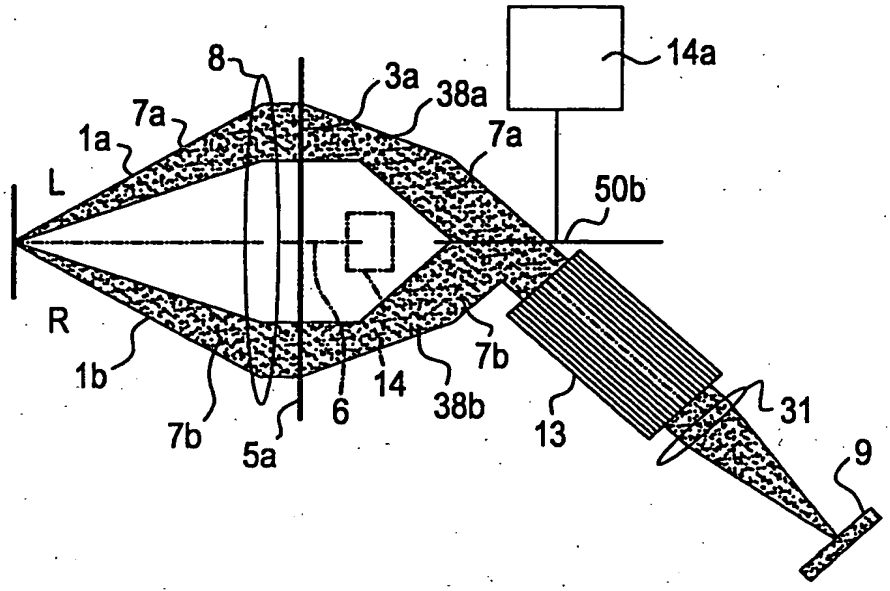

8
3a
38a
14a
7a
1a
7a
L
50b
R
1b
7b
7b
5a
6
14
38b
13
31
9

FIG. 27

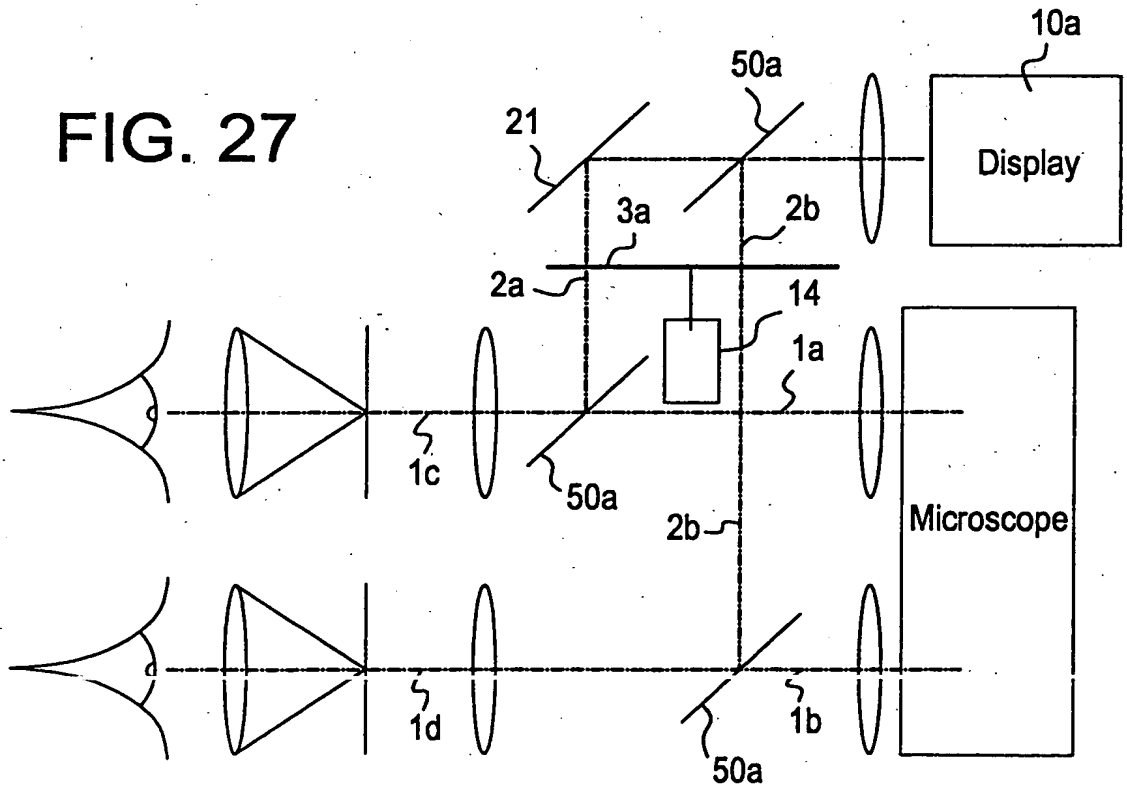

10a
50a
21
Display
3a
2b
2a
14
1a
1c
50a
2b
Microscope
1d
1b
50a

FIG. 28